

April 26, 2023

Dear fellow Town Meeting Member,

This is written in response to a [statement](#) submitted to the annotated warrant by a Town Meeting Member regarding the Article 12 Substitute Motion on artificial turf.

While we appreciate his attempted research, we ran the cited studies past the team of scientists we are working with, and found that each one is easily refuted due to how old it is, its use of faulty test protocols, or its source of funding. We take them in the order in which they were presented:

- The study in the first article cited, *European risk assessment study on synthetic turf rubber infill*, was sponsored by the tire industry. The article itself admits that "'The European Risk Assessment Study on Synthetic Turf Rubber Infill...was launched by industrial associations and companies representing the tyre granulate supply chain...to fill data gaps and provide comprehensive conclusions on potential health risks from using ELT granules in artificial turfs."
- The second study, *Synthetic turf pitches with rubber granulate infill: are there health risks for people playing sports on such pitches?* states, "The experimental protocol did not include measurements for...particulate matter of particles smaller than 10 µm in diameter or migration of substances out of rubber granulate dust into artificial lung fluid." It also says, "an assessment of the combined health effects of all the substances present in rubber granulate was beyond the scope of the study." This is a critical failure of the study's own goal to understand the health risks of playing on artificial turf where mixture studies are critical.
- The third study, *Scientific and technical support on the possible risks related to the use of materials derived from the recycling of used tyres in synthetic sports grounds* states right up front that "The analysis performed does not therefore constitute a health or environmental risks assessment and does not therefore provide any final conclusions..on the existence or absence of risks." It also states, "...the presented work relied on...the following organizations: ...*Representatives of the industrial sector, including French actors in the manufacture, installation and testing of the grounds and artificial pitches, The European Union of the Tire and Rubber Industry, and the "France Pneumatic Recycling' Group..."*
- The fourth study, *Incidence of malignant lymphoma in adolescents and young adults in the 58 counties of California with varying synthetic turf field density*, looked at county incidence of lymphoma only and density of artificial turf. There were no studies done of actual players. It concludes, "regions with higher synthetic turf field density did have a higher lymphoma incidence."

- The fifth study cited comes from *The Gradient*, widely known as an industry promoter which attempts to give credibility to the industry without disclosing their ties to it. According to the Center for Public Integrity, "Gradient belongs to a breed of scientific consulting firms that defends the products of its corporate clients beyond credulity, even exhaustively studied substances whose dangers are not in doubt, such as asbestos, lead and arsenic. Gradient's scientists rarely acknowledge that a chemical poses a serious public health risk. The Center for Public Integrity analyzed 149 scientific articles and letters published by the firm's most prolific principal scientists."
 - <https://publicintegrity.org/environment/meet-the-rented-white-coats-who-defend-toxic-chemicals/>
- Study six, *Investigation of Reported Cancer among Soccer Players in Washington State*, states right up front: "Our investigation was not designed to determine if soccer players in general were at increased risk of cancer due to exposures from crumb rubber in artificial turf." This is hardly an investigation if, in fact, no investigation was conducted.
- Study seven used as sources the Royal Dutch Football Association, Trade Association Sports and Culture Technique, Association of Sports and Municipalities, and the (trade) associations of tire companies and tire recycling. It states, "environmental impact was not considered." There really is no relevant content we can see in this citation at all.
- The eighth study is from 2017, and has been superseded by a 2021 study found here: https://echa.europa.eu/documents/10162/17220/rest_sub_infill_material_investigation_report_en.pdf/77424e81-d78e-8abc-1404-f213d27c2b3f?t=162081261831 This newer 2021 report states that "The preliminary human health risk assessment does not exclude a potential for cobalt and zinc to pose risks to human health in infill and that these substances should therefore be considered for risk management...The preliminary environmental risk assessment does not exclude the potential for cadmium, cobalt, copper, lead, zinc, 4-tert-octylphenol, 4,4'-isopropylidene diphenol (BPA), bis(2-ethylhexyl)phthalate (DEHP), benzyl butyl phthalate (BBP) and benzothiazole-2-thiol to pose risks to the environment and that these substances should therefore be considered for risk management....It is important to note that alongside this assessment ECHA has...proposed a restriction on intentionally added microplastics, that includes within its scope infill used on synthetic turf pitches..."
- Study nine is from 2014 and is too old to be useful. The first sentence is telling: "Tires are generally considered relatively benign in the environment unless subjected to high temperatures." We now know this is absolutely not true.
- **10, 11 & 12** are all so out of date as to be useless in evaluating the public health or environmental implications of artificial turf.

None of the cited studies looked at PFAS and none looked at the impacts of artificial turf component mixtures, a necessary criterion when evaluating potential environmental and public health implications.

Finally, **a brand new 2023 study** into the chemicals and gasses released in sunlight by artificial turf and the potential dangers they pose to athletes, has been published in the scientific journal *Heliyon*. Here is a quote:

“Recent studies...have proved the potential hazards induced by artificial turf sport fields due to the release of heavy metals, polycyclic aromatic hydrocarbons, and volatile organic compounds, which are defined and categorized as carcinogenic, mutagenic, bioaccumulative and toxic substances. Moreover, rubber in synthetic turf may [cause]...heritable genetic damage and induce cancer by inhalation.”

The full study can be found here: [https://www.cell.com/heliyon/pdf/S2405-8440\(23\)02135-7.pdf](https://www.cell.com/heliyon/pdf/S2405-8440(23)02135-7.pdf)

Respectfully,

TMMs Beth Melofchik, Robin Bergman, Wynelle Evans and Jordan Weinstein

Data Based, Science Driven